

Economic Commission for Europe

Inland Transport Committee

Working Party on the Transport of Dangerous Goods

Joint Meeting of the RID Committee of Experts and the

Working Party on the Transport of Dangerous Goods

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Item 5 (b) of the provisional agenda

Proposals for amendments to RID/ADR/ADN: new proposals

Mandate for a standard for the requirements on flame arresters on tank trucks

Transmitted by CEN/TC296/WG7, based on Resolution 139 taken by CEN/TC 296 on 2009-11-24

Introduction

1. There are currently a number of different tank breathing/venting system designs being produced and these depend on the knowledge of the tank builder to interpret the minimal requirements as defined in ADR.
2. It is proposed that a standard is required to specify the minimum requirements flame arresters for the different designs of venting systems, the detail of which would be too complex to include in the relevant references of ADR.
3. The demand for breathing valves is laid down in EN 14595 (covering also the requirements in 6.8.2.2.3). The demand for using flame arresters is laid down in 4.3.4.1.1 coding of tanks, as well as in the 2011 version of 6.8.2.2.3 (see ECE/TRANS/WP.15/AC.1/2009/10 and informal document INF.55 at the September 2009 session).
4. There are different technical solutions to realise the requirements of EN 14595:
 - (a) Venting directly to the air (separate valve mounted in manhole cover).
 - (b) Venting into the vapour recovery pipe work (integrated in vapour transfer valve, EN 13082).
5. Version (a) needs an end-of-line deflagration flame arrester (i.e. only the flame of a simple explosion shall be prevented from transferring into the tank with e.g. a simple gauze).
6. Version (b) needs an in-line stable detonation flame arrester (i.e. due to the long pipe work the explosion accelerates to multiple speed of sound, which cannot be prevented by a simple gauze).
7. Additionally there are other potential "holes" in the tank shell. They should be secured as well. Today the test requirements for flame arresters are laid down in ATEX-mandated EN 12874, which will soon be substituted EN ISO 16852. The knowledge of the type of flame arresters to be used in different locations, is mostly not available at the site of the truck designers and sometimes not even at the bodies, certifying the truck.

Proposal

8. A CEN-Standard shall be mandated by ADR to define the requirements on flame arresters, considering the various methods of the arrangement of all breathing valves on trucks with the tank coding LGBF. The necessary protection measures shall be laid down in the standard to be developed. This standard will refer to EN ISO 16852.

Justification

9. The degree of protection on today's operational trucks varies heavily, from virtually no protection measures to comprehensive protection measures. A common understanding will be achieved by the standard.
